

What is claimed is:

1. A scanning type confocal probe, comprising:
at least one scanning mirror; and
a transparent substrate on which said at least one scanning mirror is mounted, said transparent substrate being inserted in an optical path of said confocal probe such that a light beam passing along the optical path is deflected by said at least one scanning mirror.
2. The scanning type confocal probe according to claim 1, wherein said at least one scanning mirror includes:
a first scanning mirror that deflects the light beam in a first predetermined direction; and
a second scanning mirror that deflects the light beam in a second predetermined direction which is perpendicular to the first predetermined direction,
said first scanning mirror and said second scanning mirror being mounted on the same transparent substrate.
3. The scanning type confocal probe according to claim 1, wherein said at least one scanning mirror includes:
a scanning mirror that deflects the light beam in a first predetermined direction and in a second predetermined direction which is perpendicular to the first predetermined direction;

and

a fixed mirror;

said scanning mirror and said fixed mirror being mounted on the same transparent substrate.

4. The scanning type confocal probe according to claim 1, further including an objective lens, said objective lens and said transparent substrate being made of the same optical material.

5. The scanning type confocal probe according to claim 4, further comprising a pin hole that allows light reflected by in-vivo tissues on an object side focal plane of said objective lens to pass through and shields light reflected by the tissues on portions other than the object side focal plane of said objective lens.

6. The scanning type confocal probe according to claim 5, which includes a single mode optical fiber that receives and transmits light from the tissues via said objective lens, an object lens side end surface of said optical fiber functioning as the pin hole.

7. A confocal endoscope, comprising:

a surface observing system which allows an observation,

via said objective lens, of a surface of in-vivo tissues inside a human cavity at a first magnification; and

a confocal observing system which allows an observation, via said objective lens, of a surface image and/or a tomogram at a second magnification which is greater than the first magnification.

8. The confocal endoscope according to claim 7, wherein said surface observing system and said confocal observing system have a common objective optical system.

9. The confocal endoscope according to claim 8, wherein an optical axis of said surface observing system and an optical axis of said confocal observing system substantially coincide with each other at least in said common objective optical system.

10. The confocal endoscope according to claim 7, wherein said confocal observing system includes:

an objective optical system;

a scanning system that scans the surface and/or section of the tissues to receive light reflected thereat; and

a pickup system that selectively transmits the light reflected by the tissues on a focal plane of an objective optical system using a pin hole.

11. An endoscope device, comprising:

a light source that emits a light beam for illuminating an object to be observed;

a scanning type confocal probe which includes at least one scanning mirror and a transparent substrate on which said at least one scanning mirror is mounted, said transparent substrate being inserted in an optical path of said confocal probe such that a light beam passing along the optical path is deflected by said at least one scanning mirror; and

an image reproducing system that reproduces an image of the object using light reflected by the object and passed through said confocal probe.

12. The endoscope device according to claim 11, wherein said at least one scanning mirror includes:

a first scanning mirror that deflects the light beam in a first predetermined direction; and

a second scanning mirror that deflects the light beam in a second predetermined direction which is perpendicular to the first predetermined direction,

said first scanning mirror and said second scanning mirror being mounted on the same transparent substrate.

13. The endoscope device according to claim 11, wherein said

at least one scanning mirror includes:

- a scanning mirror that deflects the light beam in a first predetermined direction and in a second predetermined direction which is perpendicular to the first predetermined direction;
- and

- a fixed mirror;

said scanning mirror and said fixed mirror being mounted on the same transparent substrate.

14. The endoscope device according to claim 11, further including an objective lens, said objective lens and said transparent substrate being made of the same optical material.

15. An endoscope device, comprising:

- a first light source that emits light for illuminating an object to be observed;

- a second light source that emits a light beam to be scanned to illuminate the object;

- a surface observing system which allows an observation, via said objective lens, of a surface of in-vivo tissues inside a human cavity at a first magnification; and

- a confocal observing system which scans the light beam emitted by said second light source, said confocal observing system allowing an observation, via said objective lens, of a surface image and/or a tomogram at a second magnification which

is greater than the first magnification.